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EXAMINER	
LEE, JOHN W	

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
11/14/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptoboca@focusonip.com

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/788,639		KRISTENSSON ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	John Wahnkyo Lee		2624	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 September 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 and 40-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The response received on 14 September 2007 has been placed in the file and was considered by the examiner. An action on the merits follows.

#### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-38 and 40-42 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-8, 10-12, 15, 17, 20-27, 37-38, and 40-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Niemeier et al. (US 5,574,482).

Regarding claim 1, Niemeier discloses a method of recognizing words (Figs. 1-32; abstract) comprising: defining word patterns of a plurality of known words (Figs. 1-32; col. 7, lines 41-53, "that") by a plurality of paths (Fig. 32; col. 7, lines 41-53, "slides") wherein each path (Fig. 32; col. 7, lines 41-53, "slides") connects elements in a word (Figs. 1-32; col. 7, lines 41-53, "that") on a virtual keyboard (Figs. 1-32; col. 5, line 28, "qwerty keyboard"); accepting a stroke (Fig. 32; col. 7, lines 41-53, "lines") as an input

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on the virtual keyboard layout (Figs. 1-32; col. 5, line 28, "qwerty keyboard") inputting the letters of the word on a graphical keyboard layout using a symbol (Figs. 1-32; col. 5, line 28, "qwerty keyboard") that is defined by a pattern (Fig. 32, col. 7, lines 41-53); and recognizing word pattern (claim 1-c, "responding ...") by processing the pattern stroke (Fig. 32; col. 7, lines 41-53, "lines") using a combination of a plurality of channels (Figs. 1-32, "the letters on the keyboard can be a channel") that selectively process different aspects of the stroke in relation to the plurality of the paths on the virtual keyboard (Fig. 32, col. 7, lines 41-53).

Regarding claim 2, Niemeier discloses wherein the plurality of channels comprising shape information (Figs. 1-32, "a, b, c, d ...").

Regarding claim 3, Niemeier discloses wherein the plurality of channels comprising location information (Figs. 1-32, "the letters have a certain location on the keyboard").

Regarding claim 4, Niemeier discloses the plurality of channels comprising a tunnel model channel (Figs. 1-33; abstract, "the letter has a certain area that can be recognized such as a circle when it is touched by the input device").

Regarding claim 5, Niemeier discloses the plurality of channels comprising a language context channel (Figs. 1-32, "the letters on the keyboard are alphabets").

Regarding claim 6, Niemeier discloses recognizing the word pattern using shape information comprising template matching (Figs. 1-32; col. 7, lines 41-53, "It is readily apparent and inherent that the Niemeier's invention has to use template matching for each alphabets to recognize the word such as "that").

Regarding claim 7, Niemeier discloses recognizing the word pattern using shape information comprising feature extraction (Figs. 1-32; col. 7, lines 41-53, "It is readily apparent and inherent that the Niemeier's invention has to extract features for each alphabets to recognize the word such as "that").

Regarding claim 8, Niemeier discloses recognizing the word pattern using location information comprises using location matching (Figs. 1-32; col. 7, lines 41-53, "It is readily apparent and inherent that the Niemeier's invention has to match locations for each alphabets to recognize the word such as "that").

Regarding claim 10, Niemeier discloses a tunnel of the word pattern comprising a predetermined width (Figs. 1-33; abstract, "the letter has a certain area that can be recognized such as a circle when it is touched by the input device") on either side of a set of virtual keys representing a set of letters of the word on a virtual keyboard (Figs. 1-32; col. 5, line 28, "qwerty keyboard").

Regarding claim 11, Niemeier discloses recognizing the word pattern using the tunnel model channel comprising traversing keys passed by the word pattern (abstract, "movement"; Figs. 1-32; col. 7, lines 41-53) and identifying potential word candidates by partial string matching (Figs. 1-32; col. 7, lines 41-53, "It is readily apparent and inherent that the Niemeier's invention has to match partial strings for each alphabets to recognize the word such as "that").

Regarding claim 12, Niemeier discloses recognizing the word pattern using the tunnel model channel comprising transforming a tunnel and a gesture passing the tunnel (Figs. 1-32; col. 7, lines 41-53, "It is readily apparent and inherent that the.

Niemeier's invention has to transform the tunnel and a gesture, which can be the movement of the input device, for each alphabets to recognize the word such as "that").

Regarding claim 15, Niemeier discloses the word letters comprising letters from an alphabet of any of a natural language or an artificial language (Figs. 1-32, "a, b, c, d ...").

Regarding claim 17, Niemeier discloses comprising analyzing the letter s stroke (Fig. 32; col. 7, lines 41-53, "lines") to differentiate between a tapping and a shorthand gesture input (Figs. 1-32; col. 7, lines 41-53, "It is readily apparent and inherent that the Niemeier's invention has differentiate tapping and shorthand gesture input when the user is trying to input a single character or a word having more than 2 letters.>").

Regarding claim 20, Niemeier discloses comprising inputting at least one letter of a word by tapping the letter (abstract, "touching the screen with an input device ...").

Regarding claim 21, Niemeier discloses a shorthand symbol system (Figs. 1-32) for words comprising: a graphical keyboard layer (Figs. 1-32; col. 5, line 28, "qwerty keyboard") for accepting a stroke (Fig. 32; col. 7, lines 41-53, "lines") as an input\_trace (abstract, "sliding the input device ... "; Fig. 32, col. 7, lines 41-53); a storage for storing word patterns of a plurality of paths (Fig. 32; col. 7, lines 41-53, "slides"), wherein each path connects a set of letters received from the graphical keyboard layer (Figs. 1-32; col. 7, lines 41-53, "It is readily apparent and inherent that the Niemeier's invention has needs a storage for storing word patterns to recognize the word such as "that").); and a pattern recognition engine (claim 1-c, "responding ...") that recognizes a word pattern by processing the pattern stroke using a combination of a plurality of channels (Figs. 1-

32, "the letter on the keyboard can be a channel") that selectively process different aspects of the input trace in relation to the plurality of the paths on the graphical keyboard layer (Fig. 32, col. 7, lines 41-53).

Regarding claims 22-25, claims 22-25 are analogous and correspond to claims 2-5, respectively. See rejections of claims 2-5 for further explanation.

Regarding claim 26, claim 26 is analogous and corresponds to claims 2-5. See rejection of claims 2-5 for further explanation.

Regarding claim 27, claim 25 is analogous and corresponds to claim 15. See rejection of claim 15 for further explanation.

Regarding claims 37, claim 37 is analogous and corresponds to claim 1. See rejection of claim 1 for further explanation.

Regarding claims 38 and 40-41 are analogous and correspond to claims 2 and 4-5, respectively. See rejection of claims 2 and 4-5 for further explanation.

Regarding claims 42, claim 42 is analogous and corresponds to claims 2-5. See rejection of claims 2-5 for further explanation.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Niemeier et al. (US 5,574,482) in view of Zhai et al. ("Performance Optimization of Virtual Keyboards").

Regarding claim 9, Niemeier discloses all the claim limitations of the previous claim except the claim limitation of claim 9. However, Zhai teaches an equation for alphabetical tuning that has an empirically adjusted weighting coefficient (page 112).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use Zhai's method in Niemeier's invention to enhance the usability and acceptability of virtual keyboards as suggested by Zhai (page 123).

7. Claims 13-14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niemeier et al. (US 5,574,482) in view of Zhai et al. ("Shorthand Writing Stylus Keyboard").

Regarding claims 13-14, Niemeier discloses all the claim limitations of the previous claim except the claim limitations of claims 13 and 14. However, Zhai teaches that the ambiguity of the SHARK recognition can be resolved by two approaches (page 100). First one is using the transient pie menus (Fig. 4), and the second one is checking the start position or the geometric center of the sample relative to the letters defining the multiple ambiguous prototypes to determine which word the user intends to write (page 100).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use Zhai's method in Niemeier's invention to provide a feasible pattern recognition method as suggested by Zhai (page 99).



Regarding claim 18, Zhai further teaches a SHARK recognition system based on the classic elastic matching algorithm that computes the minimum distance between two sets of points by dynamic programming (pages 99-100). One set of points is from the shape that a user produces, and the other is from a prototype that is the ideal shape defined by the letter key positions of a word (page 100). A preprocessing, filtering and normalization in scale, is performed before the elastic matching between the unknown shape and the prototypes (page 100).

8. Claim 16 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niemeier et al. (US 5,574,482) in view of Carman, II (US 5,454,046).

Regarding claim 5, Niemeier discloses all the claim limitations of the previous claim except the claim limitation of claim 16. However, Carman discloses that an abbreviated Chinese handwritten entry can be trained for recognition (abstract).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use Carman's invention in Niemeier's invention to provide handwritten data readable and reproducible by the computer as suggested by Carman (col. 2, lines 20-23).

Regarding claim 28, claim 28 is analogous and corresponds to claim 16. Refer rejection of claim 16 for further explanation.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Niemeier et al. (US 5,574,482) in view of Zhai et al. ("Shorthand Writing Stylus Keyboard"), further in view of Carman, II (US 5,454,046).

Regarding claim 5, Niemeier and Zahi disclose all the claim limitations of the

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previous claims except the claim limitation of claim 19. However, Carman further discloses that the CPU searches memory data storage for a pattern match with the text/pattern pairs stored as class node, word node, and pattern node, which is a feature vector (Fig. 3B-90, col. 10, lines 45-49).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use Carman's invention in Niemeier's invention to provide handwritten data readable and reproducible by the computer as suggested by Carman (col. 2, lines 20-23).

10. Claims 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niemeier et al. (US 5,574,482) in view of Milewski et al. ("Medical Word Recognition Using a Computational Semantic Lexicon").

Regarding claim 29, Niemeier discloses all the claim limitations of the previous claim except the claim limitation of claim 29. However, Milewski teaches a recognition method for pattern recognition involving lexicon (abstract).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use Milewski's method in Niemeier's invention to provide a hybrid semantic network as suggested by Milewski (page 402).

Regarding claims 30 and 36, Milewski further teaches that the recognition method deals with medical forms that contain lots of medical words (pages 401-402).

Regarding claim 31, Milewski further teaches that a lexicon database will contain a list of English and medical words which are weighted according to the popularity of that word over time (page 402).

Regarding claim 32, Milewski further teaches that a priori data will be used for further recognition in the larger handwriting regions (page 402).

Regarding claim 33, Milewski further teaches a recognition method for pattern recognition of the medical field (abstract).

Regarding claim 34, Milewski further teaches a data compiler, a graphic user interface (GUI), and a Java Constrained Object Inference Net (page 402).

Regarding claim 35, Milewski further teaches that the objective and comments region contain lots of varying abbreviations, symbols, and numbers in conjunction with regular handwriting, and a general path can be used to narrow in on specific problems (page 402).

### ***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Wahnkyo Lee whose telephone number is (571) 272-9554. The examiner can normally be reached on Monday - Friday (Alt.) 7:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John W. Lee  
(AU 2624)



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SUPERVISORY PATENT EXAMINER